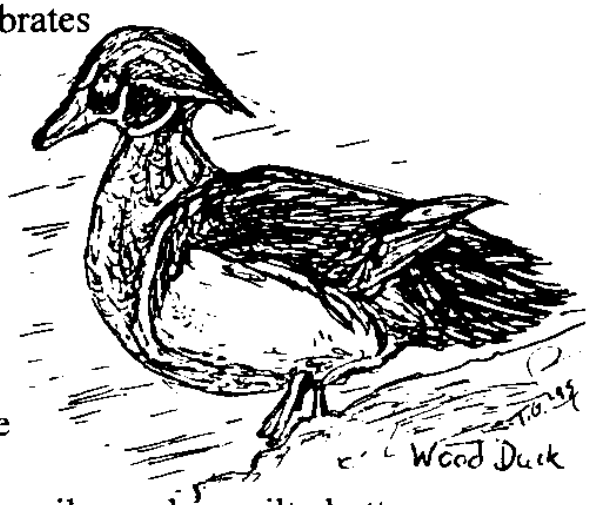
HABITATS OF THE QUINNIPIAC WATERSHED

Quinnipiac River Watershed Association, River Resources Education Series

Habitats in the Quinnipiac watershed have been shaped by the geology of the basin and by patterns of human development. A wide variety of habitats, each supporting different plant and animal communities are found along stream corridors and water bodies, in urban and suburban areas, brush-land and farmland, in wetlands and along forested ridges.

Watercourse corridors: Wild Turkey and deer live in the lush, forested floodplain and in upland habitat bordering rivers and streams. Wood ducks nest in dead trees and in nest boxes along the river. Spotted sandpipers probe for invertebrates on exposed river banks. Kingfishers, osprey, and otter feed on the fish which have returned to the river since sewage treatment plants were upgraded to the advanced treatment level, and since the dramatic reduction in industrial discharges which followed enactment of the Clean Water Act in 1972. Woody debris and overhanging shrubs like silky dogwood may obstruct canoeists, but they also provide valuable aquatic habitat where fish seek shelter and find invertebrate food. In hilly terrain, water flows quickly over stones, but many watercourse sections are slow-moving with a primarily sandy or silty bottom.

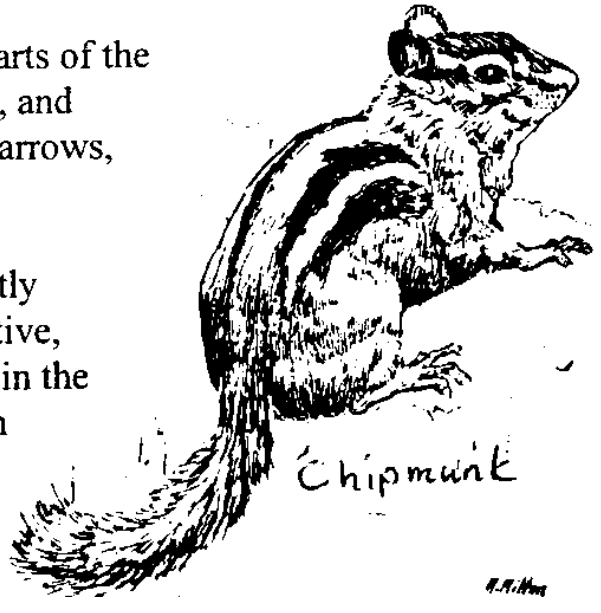


Quality of aquatic habitat in watercourses varies widely. Some streams are healthy, with native brook trout and diverse, abundant aquatic invertebrates - mayflies, stone flies and water-penny beetles, but many others have been smothered by sediment from hillside subdivisions or farm erosion, or scoured and polluted by runoff from paved surfaces. For example, fine sediment deposits are threatening populations of freshwater mussel in the Ten Mile River. Streams in residential areas may be stressed by low oxygen due to fertilizer runoff and insufficient shade, and by flashy flows and road sand from stormwater outfalls. However, a stream may recover to a surprising extent after passing through a naturally vegetated corridor - Honeypot Brook for example emerges from Cheshire Park with cooler, oxygen-rich water, able to support trout. Illegally dumped debris may litter waterways in urbanized areas, and buoyant litter is caught in snags, deposited in flood

plains, and carried down river as far as New Haven. Debris may ensnare wildlife, leak polluting fluids, or release metals through corrosion. The make-up of fish communities in the main stem Quinnipiac River varies according to the health of incoming tributaries. Pollution-tolerant carp are dominant below Hanover Pond, which receives a great deal of urban runoff. However, river sections further upstream still support native brown trout, tesselated darter, and long-nosed dace. The "Gorge", just upriver of Hanover Pond, is aerated by riffles and a fast current and is stocked with rainbow trout by the Q.R.W.A and the CT Dept. of Environmental Protection.

Man-made water bodies: Among the most conspicuous habitats in the watershed are farm ponds, sedimentation and flood-storage basins, river impoundments, and reservoirs. Dams built to provide water power for industry created a series of impoundments along the Quinnipiac, including Hamlin Pond in Plainville and Hanover Pond in Meriden, and former Community lake in Wallingford. Hanover Dam used to power a silver plating operation. Dams have also blocked passage of migratory fish, like American shad, alewife, and blueback herring, present only in low numbers in the Quinnipiac because they can not reach spawning habitat in headwater streams. Reservoir dams and water usage have also adversely affected stream flows - Roaring Brook in Southington, for example. These waterbodies support typical assemblages of lake species like large- mouth bass, bluegill, mallard ducks, painted turtles, and dragonflies. Broad Brook in Cheshire and McKenzie Reservoirs in Wallingford, both with wide wooded buffers, are important waterfowl habitat used by species like mergansers. Ponds in transition to marsh status, like North Farms Reservoir, are often very productive, and abundant frogs attract waders like great blue herons. However, habitat value is limited in dredged ponds used as swimming areas, like Wharton Brook Pond, or as ornamental ponds in industrial parks, golf courses, and condominium complexes. Spring peepers and wood frogs have ceased breeding in several ponds in new residential neighborhoods due to loss of nearby upland habitat.

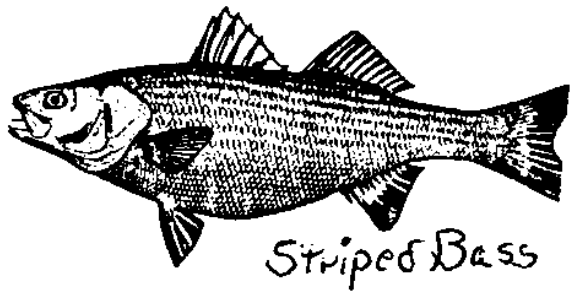
Suburban and urban areas: Throughout developed parts of the watershed, pockets of woods, small parks and preserves, and thickets along streams are used by catbirds and song sparrows, chipmunks, garter snakes, and other backyard wildlife. Older residential areas with mature native trees like sugar maples and oaks support more wildlife than recently developed areas with landscaping dominated by non-native, ornamental species. Several unusual plant communities in the watershed have been damaged by human disturbance. In



North Haven former sand plain communities have largely disappeared as the area has been developed, and fresh water emergent marshes are becoming infested by the invasive plant, purple loosestrife. However, rare plants are found on unstable sand bars in a along the mid-Quinnipiac River - a habitat type increased by erosion.

Brushland and farmland: Plant communities in disturbed areas are increasingly important, as the amount of farmland in the watershed continues to decline. Farming districts persist only in Wallingford, north Cheshire, northeast Southington, and along the Muddy River in North Haven. Hedgerows and hayfields - and also vacant lots and utility lines - support the small rodent populations needed by hawks and great horned owls as well as butterflies and a variety of other insects. Q.R.W.A. surveys documented prairie warbler, blue-winged warbler, broad-winged hawk, and great crested flycatcher in Southington, along utility lines for sewer, electric power, and gas. Stands of willows, alders, phragmites reed, and cottonwood have colonized much of the eighty acre former lakebed of Community Lake in Wallingford, exposed following a dam breech in 1979. Birds at these sites include less common species like willow and alder flycatchers, as well as thicket nesters like yellow warbler. They are important feeding areas for migratory songbirds. Sandy flats at former Community Lake are also important nesting areas for painted turtles, snapping turtles, and box turtles. Similar plants and animals occupy disturbed soils adjacent to the salt marsh in Hamden, North Haven and New Haven.

Salt marsh: Human activities such as filling and ditch-digging for mosquito control have disturbed the extensive Quinnipiac estuary, and phragmites reeds are increasing at the expense of cord grasses and narrow leaf cattail. A marsh restoration project is in progress. However, the area is still a productive, diverse, important habitat for wildlife and fisheries. Decomposing plant matter is exported with the tides to feed the seed oysters grown in New Haven Harbor. The least bittern, a state-listed Threatened species is slender enough to forage in dense stands of phragmites reed.



Ospreys nest on light towers in the abandoned railroad yard, as well as on platforms erected by the Q.R.W.A., and feed on carp which thrive in deep ponds created by clay-mining for the brick industry which flourished in the last century. Barn swallows nest in abandoned industrial buildings and bank swallows nest in a gypsum pile. Clapper and Virginia rails and numerous marsh wrens also breed in the marsh. Muskrat, black-crowned night-herons, snowy egrets, mallard and black ducks, and migratory shorebirds are abundant. The estuary food chain also supports diamondback terrapin, and game species - striped bass,bluefish, and blue crab.

Forested ridges and wetlands: The habitats with the greatest bio-diversity are the large undeveloped forested tracts on ridges, usually associated with unique and often extensive wetland areas ... like 350 acre Deadwood Swamp at the headwaters of the Quinnipiac mainstem, next to Rattlesnake Mountain. These are places where pileated woodpecker and barred owl are still found, along with neotropical migratory songbirds sensitive to habitat fragmentation, such as scarlet tanager, worm-eating warbler, and veery. Plant community types in larger undeveloped tracts differ according to bedrock geology and soil type. Pink lady's slipper, which prefers acidic soil, is common on the acidic slopes of Southington Mountain, with granite-schist bedrock. This 1200 acre forested tract drains into the flat sandy Eight Mile river valley, where white pine thrives. Traprock is the bedrock of the other ridges in the watershed, including Peters Rock in North Haven, the Hanging Hills in Meriden, and Sleeping Giant in Hamden. Rare sedges and characteristic wildflowers grow on the ridge crests and also on the moist, fertile, seepage slopes of traprock ridges - like Dutchman's breeches and red columbine. The Jefferson salamander, a State-listed Species of Special Concern, breeds in the secluded vernal pools on Cathole Mountain in Meriden. In soil derived from the red, central valley sandstone, lush, rich bottomland forests support a variety of trees, including tulip poplar and sycamore, as well as red-maple. Swamp white oak is common along the Ten Mile River in Cheshire where a broad forested swamp and farmland occupy the deep silt loam soils of former Glacial Lake Quinnipiac. The wide-roving wood turtle, which needs a broad river corridor, is also found here. Quinnipiac River State Park is a 400 acre, elongated, floodplain preserve in North Haven which forms a wildlife corridor with Sleeping Giant Park in Hamden. A bobcat was sighted in the silver maple forest near the river in 1996; it may have a den on Sleeping Giant, between traprock boulders.

Protecting and restoring habitats in the Quinnipiac watershed: *The Habitat Work Group* of the Quinnipiac Watershed Partnership (Q.R.W.P.) working closely with the *Q.R.W.A. Adopt-the-River Program*, was formed in June 1998 to address issues of habitat protection and restoration. One of our goals is to promote protection of existing unfragmented open space areas with greenway connections. Stream and watershed monitoring data is being used to argue for more rigorous wetlands protection and better sedimentation controls, and to identify potential restoration sites. Breeding bird data documents not only high bird diversity, including fragmentation-sensitive species, but also high bird densities in our large wetland systems. Monitoring data also supports the need to restore brushy and meadow-type habitat, and wooded corridors along waterways. To restore and protect aquatic habitat, watershed work groups must work with local and state officials to address the land use issues which generate sediment and polluted runoff.

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